IRDA-WELDER 600W

User-manual

SMD_King, the Netherlands

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Features

1. Gain access to sophisticated SMD-technology through IR welding.
2. Many advantages compared to a hot-air reflow-station, due to effective and penetrating IR-waves.
3. This machine is easy to operate. Users will notice they can fully operate this machine within 1 day.
4. This machine can rework printboards of several lengths, from 15 up to 45 cm.
5. The ceramic IR-heater, with the size of 120 x 60 mm and the halogen IR-lamp, emit more than 550W of IR, straight to the surface of a printboard.
6. Using IR avoids airflows which might blow away components from printboards and garantees an equal heatingpatern. This technology is perfect to use for all kind of SMD-components, especially for Micro-BGA components.

Technical parameters

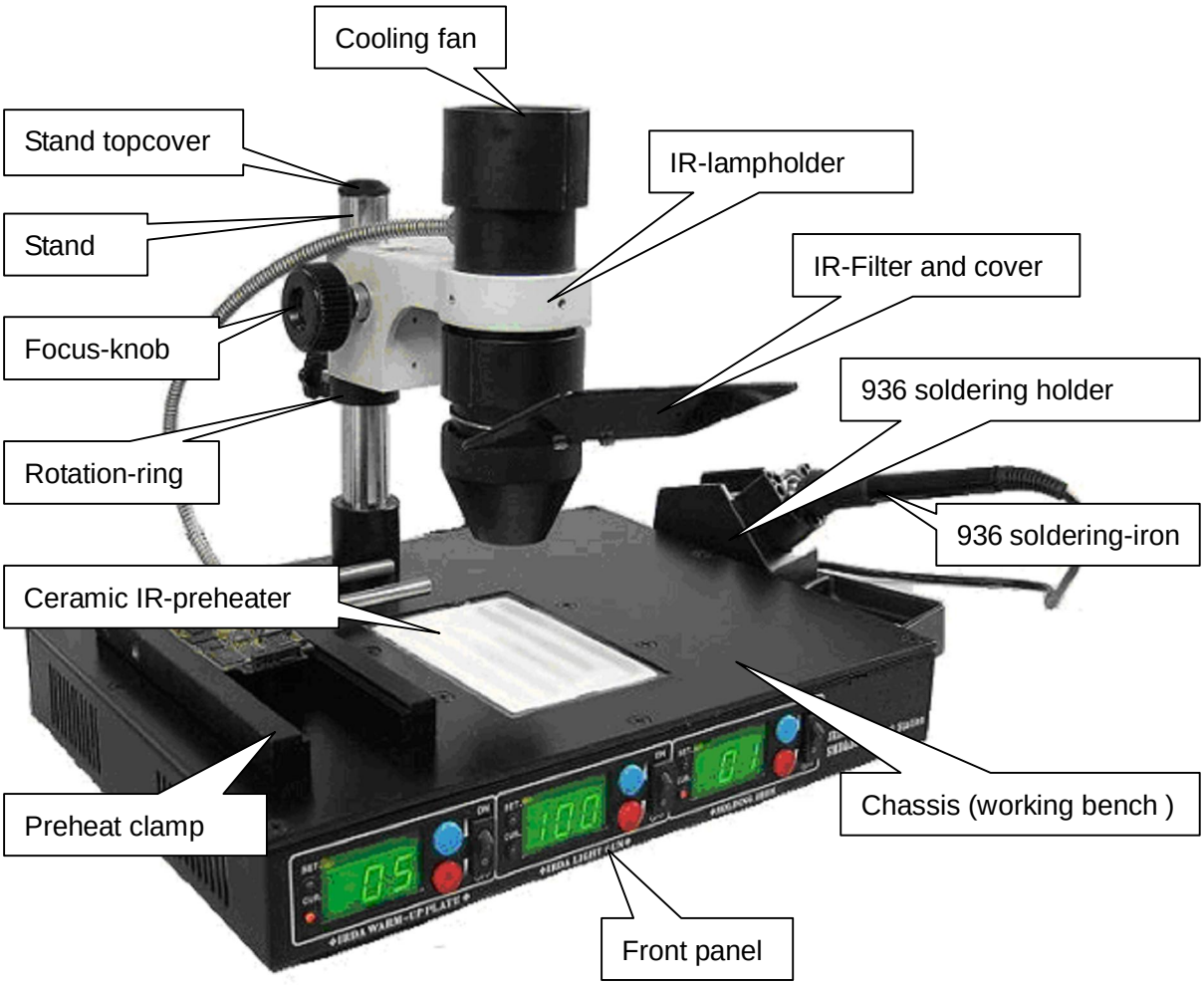
Working voltage	AC220/110V - 50/60Hz
Output power	600W
Temperature	100 ^{o}C - 350 ^{o}C

Instrument inventory

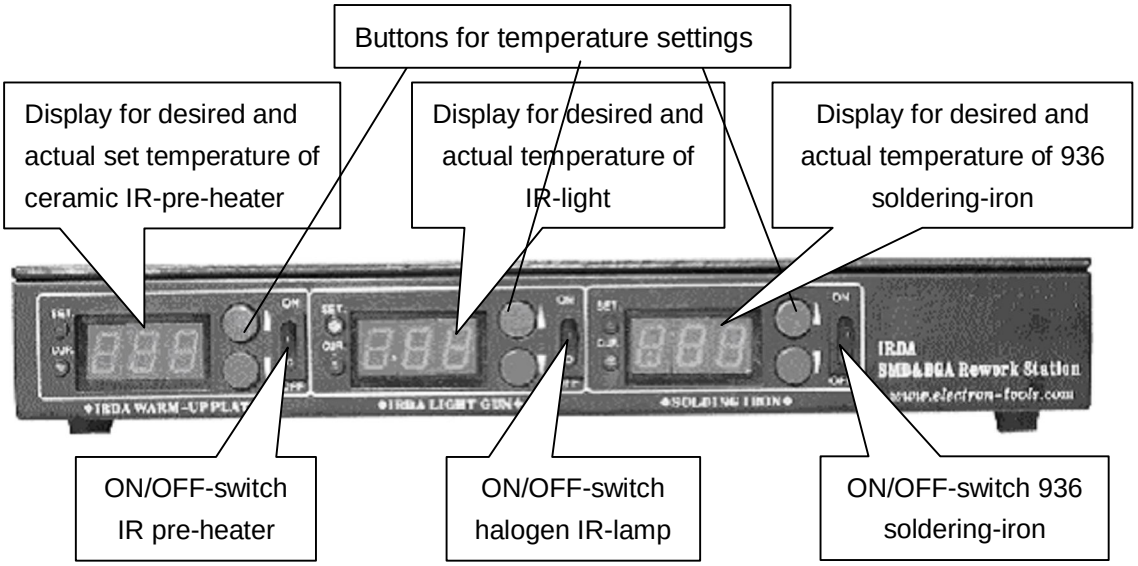
Chassis	1
Stand	1
Rotation-ring	1
IR-body (IR-lamp + fan)	1
IR-Filter and cover	1
Preheat clamp	1
936 Soldering-iron	1
936 Soldering holder	1
Power cable	1
User manual	1

Description of IR reworkstation components

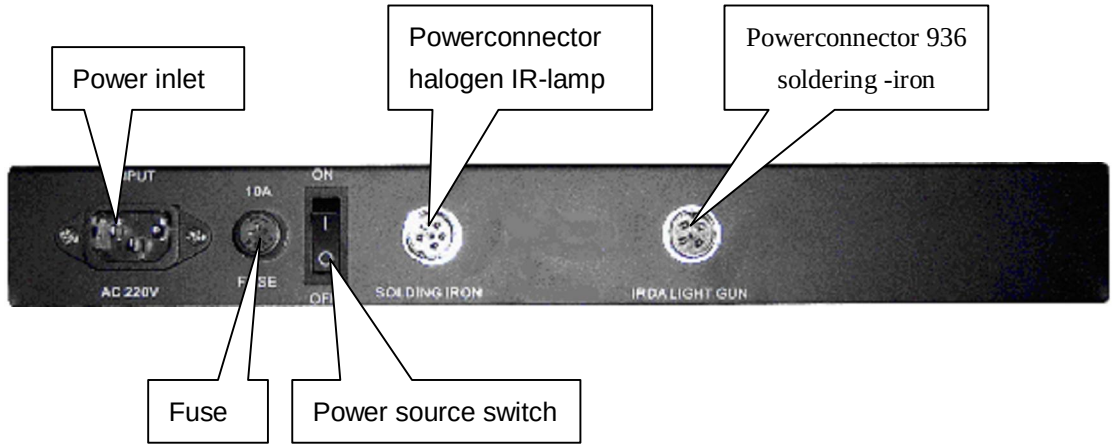
1) Main body



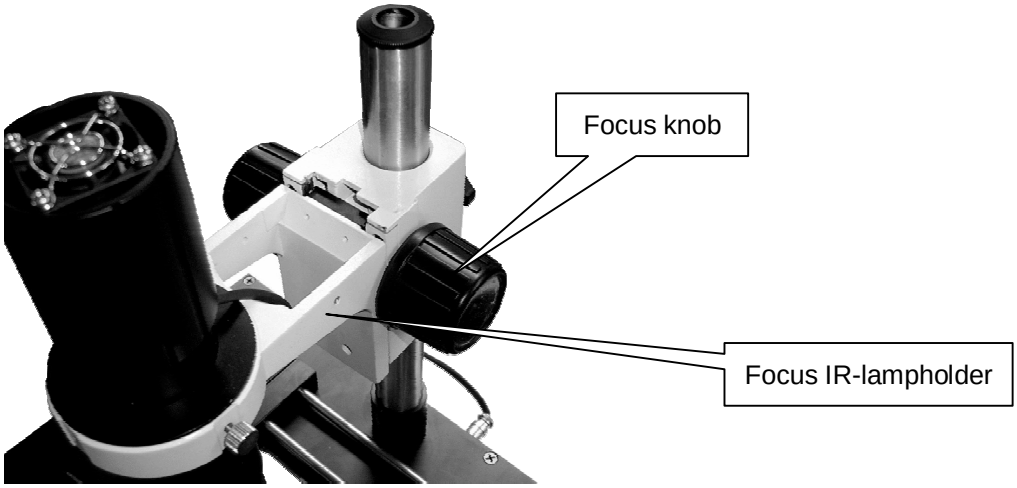
2) Front panel

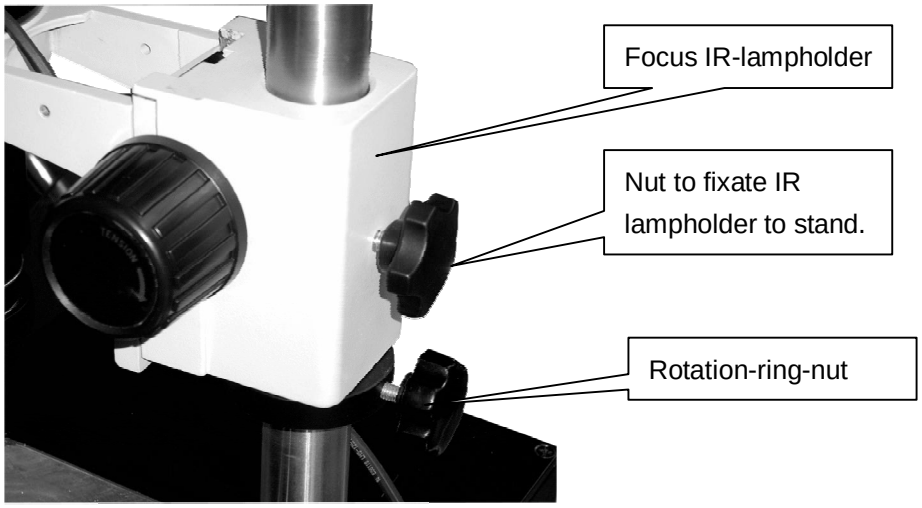

Buttons for temperature settings
Display for desired and actual set temperature of ceramic IR-pre-heater
Display for desired and actual temperature of IR-light
Display for desired and actual temperature of 936 soldering-iron
ON/OFF-switch IR pre-heater
ON/OFF-switch halogen IR-lamp
ON/OFF-switch 936 soldering-iron

3) Back panel



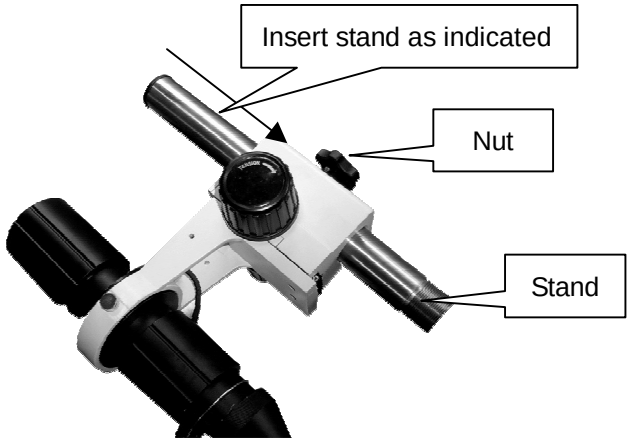
4) IR-lampholder



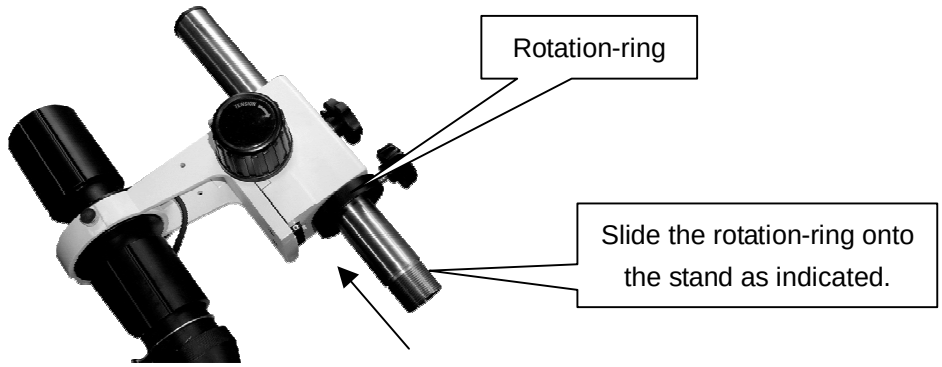


Steps of assembling

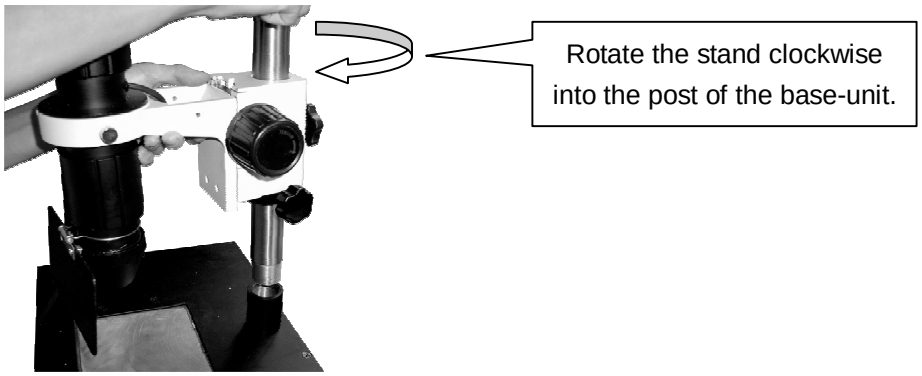
1) Slide the stand in the IR-lampholder as indicated. Adjust the optimal height for the IR-lampholder. Don't fix the nut of the IR-lampholder yet.



2) Install the rotation-ring as indicated. At the required height you can fix the nut.

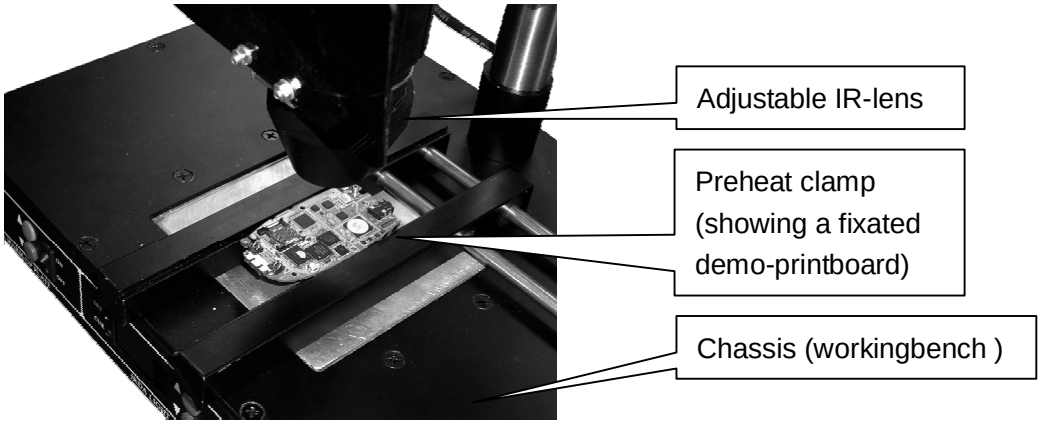


3) Insert the stand into the post of the base-unit. Rotate the stand clockwise in order to attach it to the base-unit. After the stand is fixed into the base-unit, the nut of the IR-lampholder can be fixed by rotating it clockwise.



4) Connect the wire of the IR-lamp to the base-unit (chassis) at the backpanel. Tighten it, by rotating it clockwise.

Method of operation



1) Starting

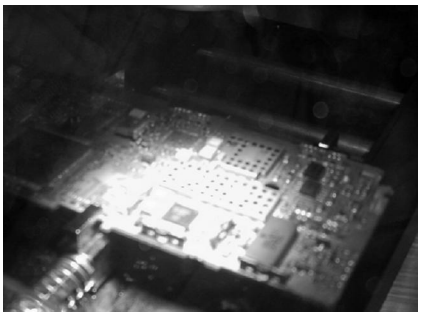
- Insert the powercable into the poweroutlet (110 / 220 VAC).
- Be sure to turn all switches off at the frontplane. After you are sure about this, turn on the power source, by switching it on at the rear of the chassis (backplane). The displays will show the last restored temperatures.
- Fix the printboard you want to repair / solder into the pre-heat clamp. Use the specific powerswitch for the device you want to heat up i.e. ceramic IR pre-heater, halogen IR-lamp or the 936 solder-iron.
  NOTE : Always keep a save distance between the hologen IR-lamp and the ceramic IR-preheater, to avoid overheating of halogen IR-lamp, its lens and / or body.
- For using the IR lamp you can select a temperature-range of 60 ^{o}C up to 350 ^{o}C. The following given values are indicators :
  - An area of approx. 15x15 mm : 240-300 ^{o}C
  - An area of approx. 25x25mm : 300-350 ^{o}C.

  The light emits straight to the surface of the printboard and can reach a temperature of 350 ^{o}C. Please take personal precaution, like protecting your eyes and skin-tissue, in order to avoid severe damage. Always use the IR-filter, when you are IR-soldering
- By focussing the lens, you can modify the size of IR-lightspot. The minimum diameter of the beam / spotsize is 15mm. The max. diameter of the beam is 30mm. Advice : Use a diameter between 20 to 30 mm.
- Activate the required devices (IR preheater, IR-lamp or solder-iron) by turning on the respective powerknob(s) on. Wait until the display shows the desired temperature.

IMPORTANT NOTE : When halogen IR-lamp is activated, always use IR-filter or use IR-protective goggles.

2) IR-rework.

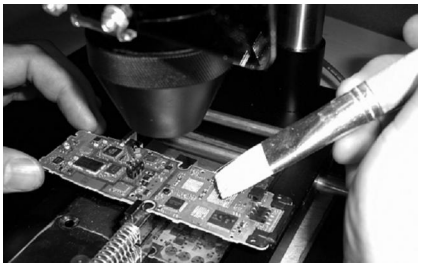
- Fix the printboard into the preheat clamp and place it above the ceramic pre-heater. Make sure the IR-beam of the halogen IR-lamp is focussed at the desired component(s).



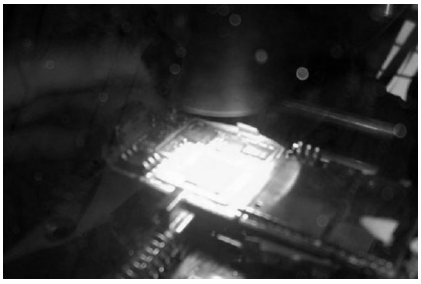
- Just wait until the printboard is heated enough and the solder becomes fluid or untill the SMD-component can be removed with almost zero force.

3) IR-soldering

- Clean pad with IPA (Iso Propane Alcohol) and apply a minimum of solder flux.
  If soldering non-BGA-components (SOC / SOIC / PLCC / etc) : apply solderpaste



- BGA without solderballs attached : place solderballs and heat the specific area untill the solderballs change surface.
  NOTE : this requires some experience



- 1) BGA-component without solderballs attached : Place BGA-component carefully.
  2) BGA-component with solderballs : Wait until flux melted and position the BGA-component carefully.
  NOTE : A pair of tweezers might be a welcome support for positioning the BGA.
  3) Other SMD-components : Position SMD-component

- Wait until component is soldered to the print. Remove preheat clamp with printboard and wait untill heated surface has reached roomtemperature. Check bondings if everything is properly attached / soldered. NOTE : This requires some experience.

4) 936 soldering

- Select required temperature and solder component(s) at desired temperature.

Precautions

- After finishing IR-soldering (IR preheater and / or halogen IR-lamp) only shut down the respective switch at the frontpanel.
  NEVER shut down the mains powerswitch at the rearpanel, untill the IR-elements (IR preheater and / or halogen IR-lamp) are at roomtemperature
- Never inhale the fume / smoke / gas which comes from solder flux or solder. This is toxic ! Use a blower, or a vacuumcleaning blower provided with active carbon. Also try to avoid to get the lens / body in contact with this fume / smoke / gas.
- Never operate this machine in humidious areas, to avoid the risk of shortcut.
- Do not operate this machine in a too dry area, to avoid static electricity, which might damage internal electronics or your SMD-components.
- Be sure this machine and you are connected to the same ground, in order to avoid the risk of static electricity.
- Disconnect the mains powerplug when the reworkstation will not be used for more than 24 hours.
- Never open this machine for repair or other purposes.
- Operate carefully and take care.